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INTERNAL DYNAMICS IN $SF_6\cdots NH_3$ OBSERVED BY BROADBAND ROTATIONAL SPECTROSCOPY

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The rotational spectra of $SF_6\cdots NH_3$ isotopologues have been observed in a pulsed nozzle chirped pulse Fourier-transform microwave spectrometer in the frequency range 6.5-18.5 GHz. The spectrum of $SF_6\cdots{}^{14}NH_3$ has been fitted to a Hamiltonian describing a symmetric top complex in which two symmetric top subunits undergo free internal rotation about a common symmetry axis. The distance between the centers of mass of the two monomers was found to be 4.15776(7) Å. Challenges associated with fitting $|m|$=1 transitions (correlating with K of free NH_3) for $SF_6\cdots{}^{14}ND_3$ imply complicated internal dynamics occurs within the complex.